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Wildlife and Related Natural Resources

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MILLS E. GODWIN, JR., GOVERNOR

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COVER: HUMMINGBIRDS AND TRUMPET FLOWERS,
by Ralph J. MacDonald, Nashville, Tennessee

Editorial

THE PFD - YOUR TICKET TO SURVIVAL

Although the July 4th weekend officially kicks off National Safe Boating Week, it is none too soon to be thinking about Boating Safety. Disregard for safety equipment is the most common boating violation according to Virginia Game Wardens. Lack of the proper number of approved Personal Flotation Devices accounts for 35% of the tickets written. For some reason people will spend thousands on a fancy boat and operate it with a handful of half rotten life vests under the deck. The requirement of one serviceable Coast Guard approved PFD for each passenger has been the most publicized of all safety regulations but still is the most often ignored. Usually it is a failure to count passengers and PFD's to see if the counts agree. Sometimes the condition of the PFD's render them unserviceable. Chucked under a forward compartment adrift in bilge water they won't last long. Also, if they are left in a pile on the deck with anchors, landing nets and fishing tackle they will get rips and punctures or have straps torn off.

Over the years there has been some confusion over PFD types. Basically they consist of life jackets and vests that will float the wearer face up, vests which will just float the wearer, and throwable devices such as bouyant cushions and ring buoys made for grabbing and floating. All are legal in boats under 16 feet so choice is up to the user. In boats 16 feet and over wearable devices (vests or jackets) must be provided and at least one throwable device is required in addition.

Many view PFD's with disdain because they are uncomfortable to wear. For less than the cost of a new prop or a new cooler you can get a Coast Guard approved tailored vest that is comfortable, not too hot, and may even feature useful accessories such as pockets.

Most boating deaths could be avoided if PFD's were worn, and many if they were only available. When misfortune overtakes you the PFD is the ticket out for you and your family. Take a little time to check them out. It may save you a citation next time out and may someday save a life.—HLG

Letters

ON THE PLUS SIDE

I would like to take this opportunity to say that Mr. Cobbs failed to tell the entire story about hunting with CBs.

Our club hunts with CBs the correct way and I would like to tell the "other side" of Mr. Cobbs' story.

At the beginning of the day's hunt, we meet and the huntmaster decides what area we are to hunt and decides where each hunter is to take up each stand. Each hunter drives, take stands and wait for the dogs to jump. If the dogs have jumped a doe (and only bucks are allowed) he calls ahead to tell us what the dogs are running and asks that the rest of us catch the dogs if we can. We catch the dogs or call on the CB to report which way they went so that the huntmaster can catch them. Now, he does not have to wait until ten o'clock p.m. and for a call from someone two counties away to come and pick-up his dogs. If off club property he calls and tells us as he tries to cut the pack off. This saves time, gas and money. Also, when it's time to break and eat, we all know when and what time.

Apparently Mr. Cobbs is a native of the area in which he hunts and he has a lot of land that most of us do not have access to, so we use the CBs to find our way around and also what land is accessible to us.

I don't think that hunting with CBs has cut down on the sport, but has added a new dimension — one that "old-time" deer hunters will have to get used to.

Robert D. Thornton
Montpelier

LIKES AHRENS STYLE

I am so conscious of writing styles that sometimes I hurt so much while reading an article — it becomes unprofitable to continue.

However, I want to commend Carsten Ahrens on an outstanding article on the shrew. It was vivid, fluid, personal. Thank you and the author.

W. R. Martin, Chaplain
Culver, Indiana

BAD OLD COWBIRDS

I think that the cowbird is unjustly receiving bad publicity as in Carsten Ahrens "Once At Daybreak" story in the April issue. The story may or may not be true, but it sounds like a fairy-tale of bad animals vs. good animals. The pair of warblers represent the pretty, "good" birds. The female cowbird who lays her egg in her nest is a scheming villainess. The purple grackle that eats the cowbird egg is the hero who saves the day. This kind of story bothers me. The cowbird was merely following her instincts by laying her egg in the most convenient nest. The grackle selected her egg simply because it was the largest egg in the nest.

Cowbirds have gotten a bad reputation because of their habit of laying eggs in other birds nests. No one knows why they have evolved this trait, but they are very

dependent on other birds to raise their young because they are unable to do it themselves. Let's not belittle them for doing what comes naturally.

Deborah R. Painter
Norfolk

CLEAR THE SHENANDOAH

I am writing to voice my opinion on the pollution of our rivers and streams. My father and I go camping every summer on the Shenandoah River and last year the river looked like a sewage pool. The sunfish that you catch are covered with little white worms. Is there something we can do to clean our river?

Leonard Bauserman, Jr.
Winchester

STILL THE BEST BARGAIN

I'd like to express my concern about your recently announced increase in subscription rates, from \$2 to \$3 per year. At \$3.50 or even \$4.00 for twelve issues, a subscription would still be one of the best bargains an outdoorsman could find.

I like your new logo. I only hope that the new rates are high enough to enable you to keep up the good work.

Lloyd L. Gould, Jr.
Fredericksburg

The Eastern Chipmunk





Left: An Eastern chipmunk settles down to a tasty acorn meal. Middle and Right: The chipmunk stuffs his cheeks with food. In order not to be hurt by the sharp point of an acorn, the chipmunk nips off the tip of the nut before stuffing it into his cheek pouches. Photos by L. L. Rue

By R. A. OTTO and J. E. ESTEP

The eastern chipmunk is one of the most active animals common to Virginia. In fact, these fascinating little rodents derive both their common and their scientific names from aspects of their daily activities. Their common name, chipmunk, is a corruption of the Algonquian "chitmunk," which literally means "head first" and refers to the chipmunk's speedy method of descending trees and popping down burrow holes. *Tamias striatus*, their scientific name, translates as "the striped steward," and anyone who is familiar with the chipmunk's food gathering and storing habits will testify to the aptness of this nomenclature.

The chipmunk is an easily recognized species, whose appearance is strikingly marked by five dark brown to blackish stripes, which contrast with a background of rich, rusty, red fur. Dark stripes, bounded above and below by buff-hued areas, mask each eye, and a reddish-brown stripe appears on each cheek. The striped motif is continued in the tail, which is usually black on top, rusty bordered with a black underside, and fringed with white hair. The striped appearance is functional as well as attractive, for it helps the chipmunk blend in with the shadows of his woodland home.

American Indians also admired the coloration of the chipmunk, and several Indian legends have survived to tell us how the chipmunk got his stripes. Perhaps the best known of these concerns an animal council which took place many years ago. The council was to decide whether there should always be day or always be night. The bear, favoring night, entered into a loud argument with his tiny brother, the chipmunk, who favored day. The argument went on through the night until at last dawn came. The bear was so enraged at the coming of daylight that he swung a mighty paw at the chipmunk.

The chipmunk dodged and received only a glancing blow, but to this day he wears five dark stripes on his back where the bear's claws struck him.

As to size, the chipmunk is one of the smaller members of the squirrel family, and attains a length of 8-12 inches, which includes his 3-4 inch tail. As an adult, the chipmunk will weigh 2½-4½ ounces, or roughly, about as much as a good sized field mouse.

On occasion, the surprisingly loud "chuck-chuck-chuck" of the chipmunk is heard before the animal is actually seen. Some listeners claim that the call is really a "chip-chip-chip" and suggest that this is the source of the name, chipmunk. In any case, the calling may be continued for several minutes at a rate of 130 chucks per minute. Like most other animals, the chipmunk's vocabulary includes a loud fright call---chiprrr---which ends in a trill, and apparently is used to warn his fellow chipmunks of approaching danger.

The eastern chipmunk is distributed from Canada south to Georgia and Louisiana, and from the East Coast to the eastern parts of Oklahoma, Kansas, Nebraska, the Dakotas and Saskatchewan. In Virginia, the chipmunk is found throughout the state but is uncommon in many of the coastal counties.

Well drained, open woodland seems to be the favorite habitat of chipmunks, but they will also be found along forest borders, hedgerows, rock piles, stonewalls and old outbuildings. Quite often these little mammals will take up residence in suburban areas where shrubs, trees, flowers and vegetable gardens offer abundant food and cover.

Chipmunks are extremely industrious homebuilders. They dig extensive burrow systems which may be as long as forty feet. Along the main tunnel are several side tunnels which serve as pantries, and which the chipmunk will fill with nuts and seeds in anticipation of winter's food shortages. One side tunnel is not used for



Left: With his cheeks bulging with acorns, this Eastern chipmunk looks like he is suffering from a toothache. Right: To survive the cold, the chipmunk curls up in a snug nest to hibernate through the winter.

food storage, but is reserved as a toilet chamber. At the deepest part of the burrow, a larger chamber is hollowed out to a diameter of one foot. This chamber is lined with dried leaves and soft grass to serve as a bed, and as beds go, it is as snug as any Chippendale.

A large variety of foods are eaten by chipmunks. These include berries of dogwood, wintergreen and many other species. Seeds and fruits of maple, box elder, and elms, and the nuts of oak and hickory are eaten, as are mushrooms to a certain extent. Insects and insect larvae also comprise a part of the chipmunk's diet and thus the chipmunk contributes toward limiting insect numbers.

Toward the end of summer and beginning of autumn, chipmunks devote most of their energy to gathering and storing food for the winter. With admirable forethought, the chipmunk chooses only nonperishable goods such as hickory, acorns, beech-nuts, and walnuts. As foods are gathered, the chipmunk uses his paws to push them into his cheek pouches; the prudent chipmunk, however, is careful to nibble off sharp projections from the nuts (hickory in particular) before stuffing them into his pouches. Carrying as many as 4 hickory nuts or 30 kernels of corn at one time, the industrious chipmunk will usually store much more than he can use during the winter. In the burrow of one particularly hard-working chipmunk, a naturalist found more than one-half bushel of acorns and hickories.

Come the late part of October, the chipmunk retires to his cozy, well-provisioned burrow. In the northern part of their range they will remain in their burrows almost all winter, until the spring shepherds in fresh new food sources. In Virginia, however, chipmunks may remain active above ground throughout the year, retiring to the shelter of their subterranean homes only during the most bitter weather.

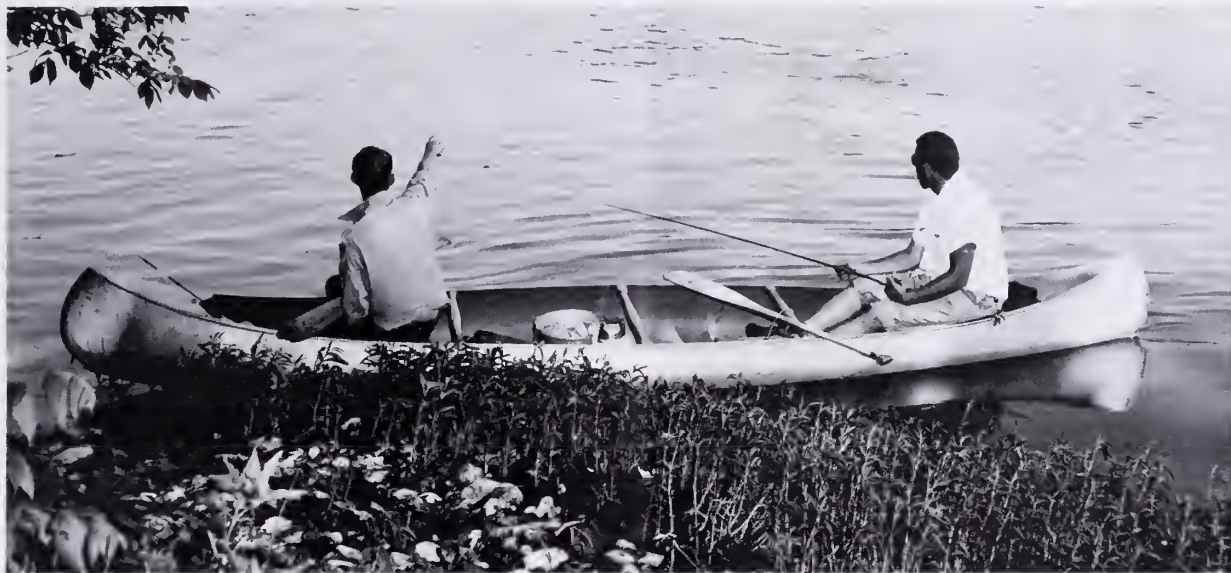
When spring finally arrives, the chipmunks begin socializing and courting. Mating usually occurs during March, and approximately 31 days later, three to five furless young are born in the female's nesting chamber. Within 30 days after birth, the young chipmunks have developed their full fur coats, and emerge from the burrow wearing the stripes of adulthood. During mid-summer, the young move out of the mother's burrow, and establish residences of their own nearby, digging out burrows and thus continuing the life cycle of their species.

Of course, like all other animals, the chipmunk can become a pest under certain circumstances. On occasion, their burrows may undermine a rock garden or stone wall, or the chipmunk may destroy valuable flowers, shrubs, or vegetables. If only one or two chipmunks are involved, trapping may be a practical control method. If numerous animals are involved, however, repellents or rodenticides may be necessary. Suitable repellents and rodenticides are available for use against chipmunks, and information regarding their use is available from county extension agents.

All in all, the chipmunk is a remarkable little animal. His burrow serves to aerate the soil, and he carries nutrients deep into the soil where they are broken down and recycled. The burrow system helps control run-off and thus contributes to a balanced watershed. The chipmunk eats some insects, helping to control damage, and the chipmunk himself is eaten by carnivores, thereby filling an important link in the natural food chain. But perhaps the most important role of the chipmunk is the enjoyment it affords to those of us who derive pleasure from simply watching him scamper about his daily activities. Few other woodland creatures possess as much natural appeal as the industrious, active chipmunk.

Floating The James River

By WILLIAM AND FRANCES SADLER



Most sportsmen have fantasies of becoming an outfitter, a big-game guide, or the ramrod of a float trip down a meandering waterway. Some of these fantasies can become reality by simply taking advantage of one of Virginia's major natural resources.

The James River, forming in the Allegheny hills, presents an opportunity for one to arrange his own float trip that may rival any river trip imagined. If one follows a few basic guidelines money does not have to be the inhibiting factor it becomes when a commercial outfitter is supplying the boats, tackle, camp gear and grub. The fun of such a journey lies in re-creating the intrigue and adventure of exploration while enjoying a combination of sports; camping, boating, nature study, and fishing.

We recommend that at least two boats be in a party for safety. A flat bottom jon boat or a canoe is more easily handled in shallow water and around rapids than those with deep V-shaped bows. Portage at falls and around unnavigable rapids dictates a vessel that is light enough to be easily carried. Some river floaters prefer a 12 to 16-foot jon boat which they feel gives more stability with heavy gear and with larger people. Canoes, on the other hand, are more stable than they might appear and they move more rapidly and maneuver more easily in rough water.

Two average-sized adults with gear is the limit on the 12 to 14-foot jon boat. Check the stern plate of the vessel for the load limit and don't exceed it. The average 17-foot canoe can carry 2 persons and more than enough gear for overnight camping.

One may enjoy this type of recreation from mid-May until early September when temperatures are mild, although some avid river floaters go all year as long as

the water isn't frozen. The cool of spring finds the mighty James deeper and rolling at a velocity of .67 mph. The current in the center of the river moves more rapidly so one seeking a leisurely trip should float the outer edges making sure his speed fits the needed time between landings. Above Scottsville Landing, the current tends to flow about .8 mph due to the narrow banks and elevation. These averages are not indicative of the flow around certain obstructions, over fall lines, or in turbulent water. Fluctuations have been found between .1 and 6 mph in these areas. When the river is swollen to 6 feet from heavy rains and is moving at an average of 3 feet per second, or 2.01 mph avoid her, unless out for reckless adventure.

New rocks will appear during the hot days of mid-summer and, although the water moves more slowly, some white water awaits among the boulders. The James is wide enough in most cases to accomodate alternate routes around turbulence.

Several factors determine choosing a picnic area on a day float which also apply to choosing a campsite for an extended journey. Most state maintained landings have trash disposal facilities for debris from lunches, etc, but none allow overnight camping. They may be utilized along the float for a lunch stop and for stretching the legs.

Some of the larger islands which could be cultivated or used for recreational purposes were given by land grant to the property owners on either side of the river when our country was young. If an island is posted, cultivated, grazed or set up as a recreational facility, stay away and search for a "wild island." These islands appear, disappear, or relocate over the years with flooding of the river and the entrapment of debris, and

serve no agricultural significance. Any island larger than a house or yard is sufficient to use as a picnic area and campsite. Usually such an island will have debris piled on its upstream side, and a cleared or grassy area, or sandbar extending from its lower half. Improvisation and innovation are half the fun in floating and setting the cooksite, so that expensive equipment will not be necessary. A large square of heavy mill plastic or tarpaulin should be taken to function as a picnic spread, temporary lean-to shelter, and as a nearly water-tight gear wrap. When folded about the gear and extra clothing, then tied as a package, it will float after a spill until it can be retrieved. Several types of rubber or plastic pack containers are available from stores which carry outdoor gear. Several lengths of rope should be carried, preferably the nylon or plastic types, staying away from the twine or absorbing material types. One 20-25 foot section, one 10-12 foot section, and several shorter lengths, 3-4 feet long, will earn their keep before the float is through. The longer pieces act as tow ropes over sandbars in shallow water, lowering lines over low check dams, and as ties for the vessel onto the transport vehicle. These lengths, when attached to an old window weight, serve nicely as drag anchors while fishing a promising eddy and as a shelter support when anchored between two points with the tarp draped across. The shorter sections can be staked into the ground as ties for the tarp.

A temporary camp for lunch might require the gathering of fuel from the wash debris if food is to be grilled or prepared with heat. Do not cut living trees for fuel. One may stock up from the wash piles above the cooksite. Often it is simpler to take enough charcoal and starter for one meal. It is imperative that trash, tin cans, food wrappers, and bottles be stored and disposed of at the landing sites or taken home. Nothing is uglier or more dangerous to wildlife than plastic soft-drink packs, half-opened cans, and broken glass.

One should outfit himself to accomodate the weather, bearing in mind that a light nylon jacket is easy to tuck away with the gear. A wide-brimmed hat, the western style, takes rain out over the shoulders and keeps the sun off a sunburned neck. The wide brim presents an excellent insect barrier when sprayed with repellent and, when dipped in water, it provides a comfortable, cool head piece. High-topped tennis shoes, or canvas ones with higher sides, are fine for scuffing along over rocky bottoms and landing or launching. They are light, provide some ankle protection against bruising and the high tops keep gravel out.

A state fishing license is required by any one fishing who is over 16 years old, and written permission must be in one's possession on posted land if exploring or fishing from the bank. Follow one general rule regarding land along the banks: Stay off except in an emergency or unless one has obtained permission from the owner to land, launch or lunch.

Flyrods with popping bugs tease big bluegills out from the eddies, and spinners will lure the smallmouth from the willows. The stretch of the James above Cartersville was cited by FIELD AND STREAM magazine as a smallmouth "hot spot" in Virginia. Diving lures that return to the surface on slack line are more feasible, especially when fishing behind your craft. Fewer lures are lost when fished downriver ahead of the boat, for retrieving a snagged lure is more probable as the boat passes the obstruction. Live minnows and worms on a cork/sinker assembly create snagging problems while floating due to their pendulum design, but they work nicely while anchored or camping on the islands. The typical flyrod assembly with small hook and BB split shot cuts the snagging problem when using either minnows or night crawlers.

Before launching, become aware of the boating laws of the state and adhere to them closely, especially in the matter of life preservers and other equipment required if motors are used. Wear a life jacket at all times, making sure it is designed for one's weight range. Remember, the inconvenience of wearing it is far less than that experienced when it is needed and not being worn.

Before leaving be sure some one knows where the float will begin and end, and your approximate time table. Two methods may be followed in planning the drop-off and pick-up of the float vessels by the transport vehicles. At least two vehicles should be used, depending on the size of the party. One vehicle should be left at the landing site. Then the entire party should continue together to the upstream launch site taking the crafts with them. (Note the landmarks about the landing if not readily identifiable from the river.)

When only one transport vehicle is available or one chooses not to leave his vehicle unattended downriver, have a friend or relative drive your vehicle from the launch site to the landing site, with the understanding that it will be there by your estimated arrival time.

A Virginia highway map will provide the main highway routes on both sides of the river all the way to its source if necessary. A fold-out map furnished by the Game Commission gives all the public landings on Virginia's waterways and other information as to locations and services of marinas. This pamphlet, entitled, "Boating Access to Virginia Waters" shows the public landings along the James that are maintained by the Commission. This publication is available upon request to "Virginia Commission of Game and Inland Fisheries," PO Box 11104, Richmond, Virginia 23230 at no charge.

The information found on the map following this article was derived from several maps, the author's practical experience and information provided by Game Commission fish biologists. Float time between the various points listed can be calculated by adding fishing time, ect. to the average paddle times listed.



Above: A familiar face to Virginia Canoeists paddles through a small riffle. Left: Preparing to end a day's canoeing at an island camp. Below Center: Mrs. R. E. B. Steward with a couple of fine bass which came to a popping bug. Right: An overturned canoe provides a table for camping canoeists. Bottom: Between an island and the river bank, a fly fisherman finds a quiet pool.



Floating The James River

By WILLIAM AND FRANCES SADLER

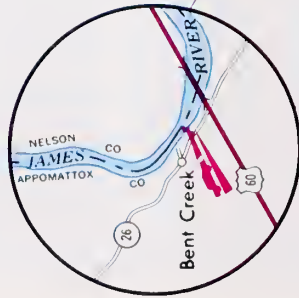
This map shows paddle times between various points on the James River along with the fish likely to be caught in these areas. Boaters should add fishing time, etc. to these paddle times when estimating trip times. This map does not show all obstructions, islands, rapids, etc. Before going on a float trip you should obtain a topographic map of the area. These maps are available from the Division of Mineral Resources, Charlottesville, Virginia.

Balcony Falls Dam — Dangerous rapids below Balcony Falls Dam. Boaters should prepare to portage around dams between Maury River and Lynchburg.

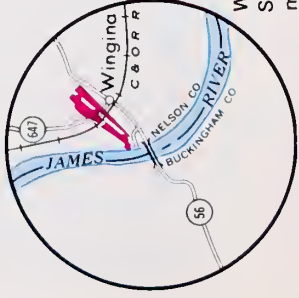
Several dams between Lynchburg and Glasgow. Approximate locations of major dams are shown here. Check area Topo Maps before going down river.



GLASGOW LANDING



BENT CREEK LANDING



WINGINA LANDING

Bent Creek — Wingina:
Paddle time 4 to 6 hrs. Some small riffles, several islands. Good smallmouth, redbreast & channel cat fishing. General store at Bent Creek. Privately owned ramp downstream at Greenway, privately owned ramp & store at Norwood.

Wingina — Howardsville: Paddle time 4-6 hrs. Several islands, good scenery. Fishing for large-mouth, smallmouth, redbreast & channel cat. General store at Wingina. Ramp on the James River WMA (no camping) 2.3 miles below Wingina.

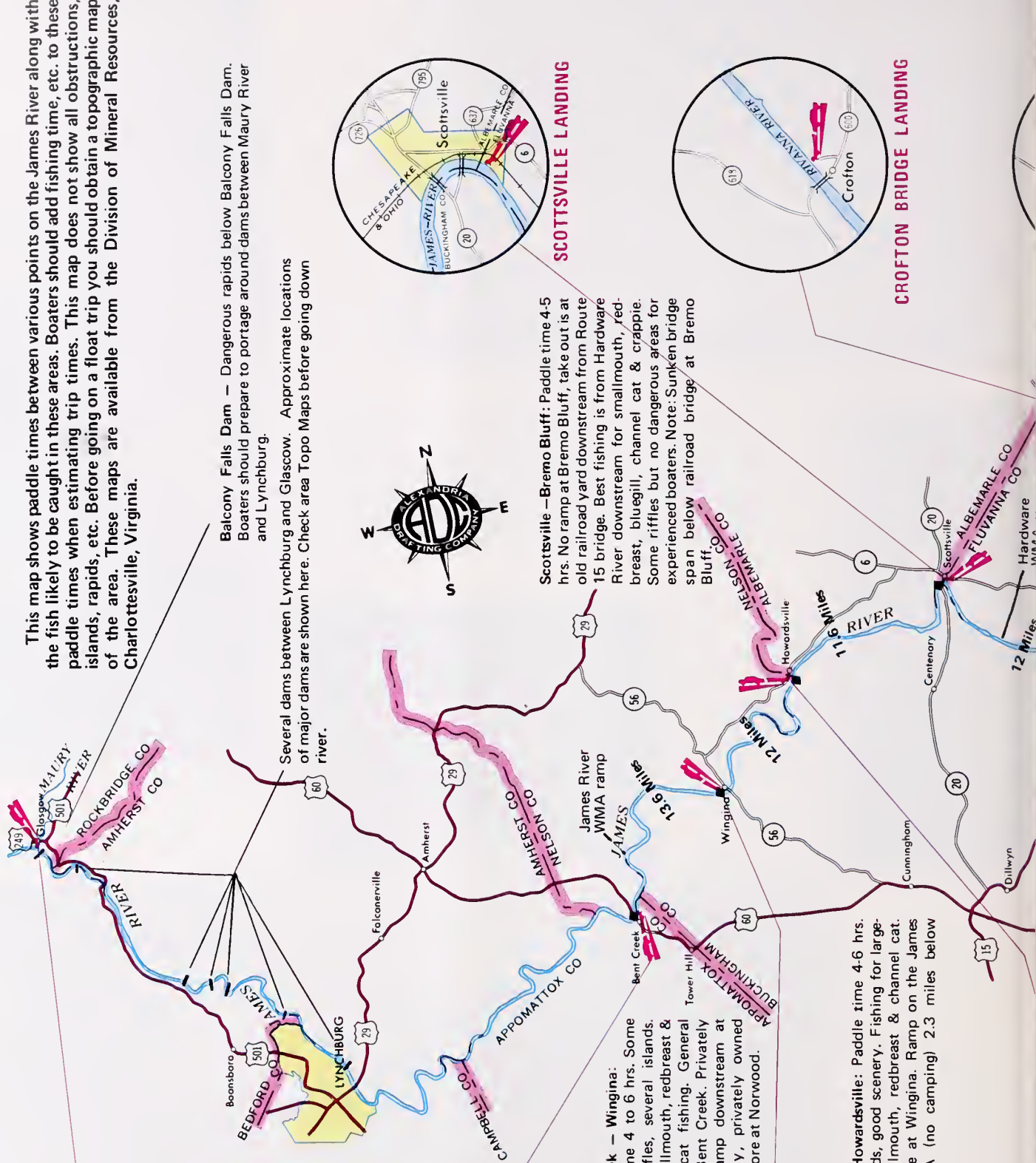
Scottsville — Breomo Bluff: Paddle time 4-5 hrs. No ramp at Breomo Bluff, take out is at old railroad yard downstream from Route 15 bridge. Best fishing is from Hardware River downstream for smallmouth, redbreast, bluegill, channel cat & crappie. Some riffles but no dangerous areas for experienced boaters. Note: Sunken bridge span below railroad bridge at Breomo Bluff.

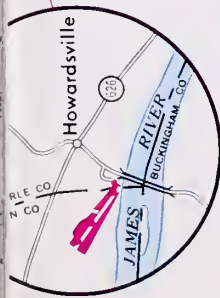


SCOTTSVILLE LANDING



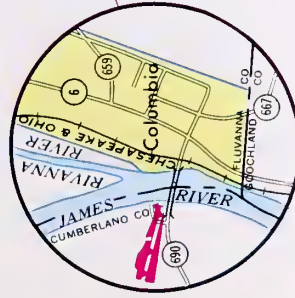
CROFTON BRIDGE LANDING





HOWARDSVILLE LANDING

Howardsville — Scottsville: Paddle time 5-6 hrs. Negotiate second set of riffles below Goosby Island on the left side. No difficult areas after Warren Ferry. General stores, phones, etc., at Howardsville and Scottsville.



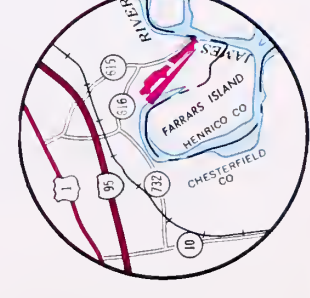
COLUMBIA LANDING

Columbia — Cartersville: Paddle time 3-4 hrs. No difficult areas. Fishing for smallmouth, redbreast, bluegill, largemouth, and channel cat. Facilities and services in Columbia and Cartersville (1/2 mile from river).

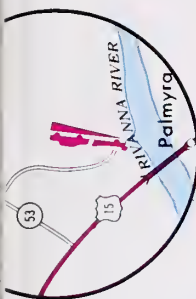
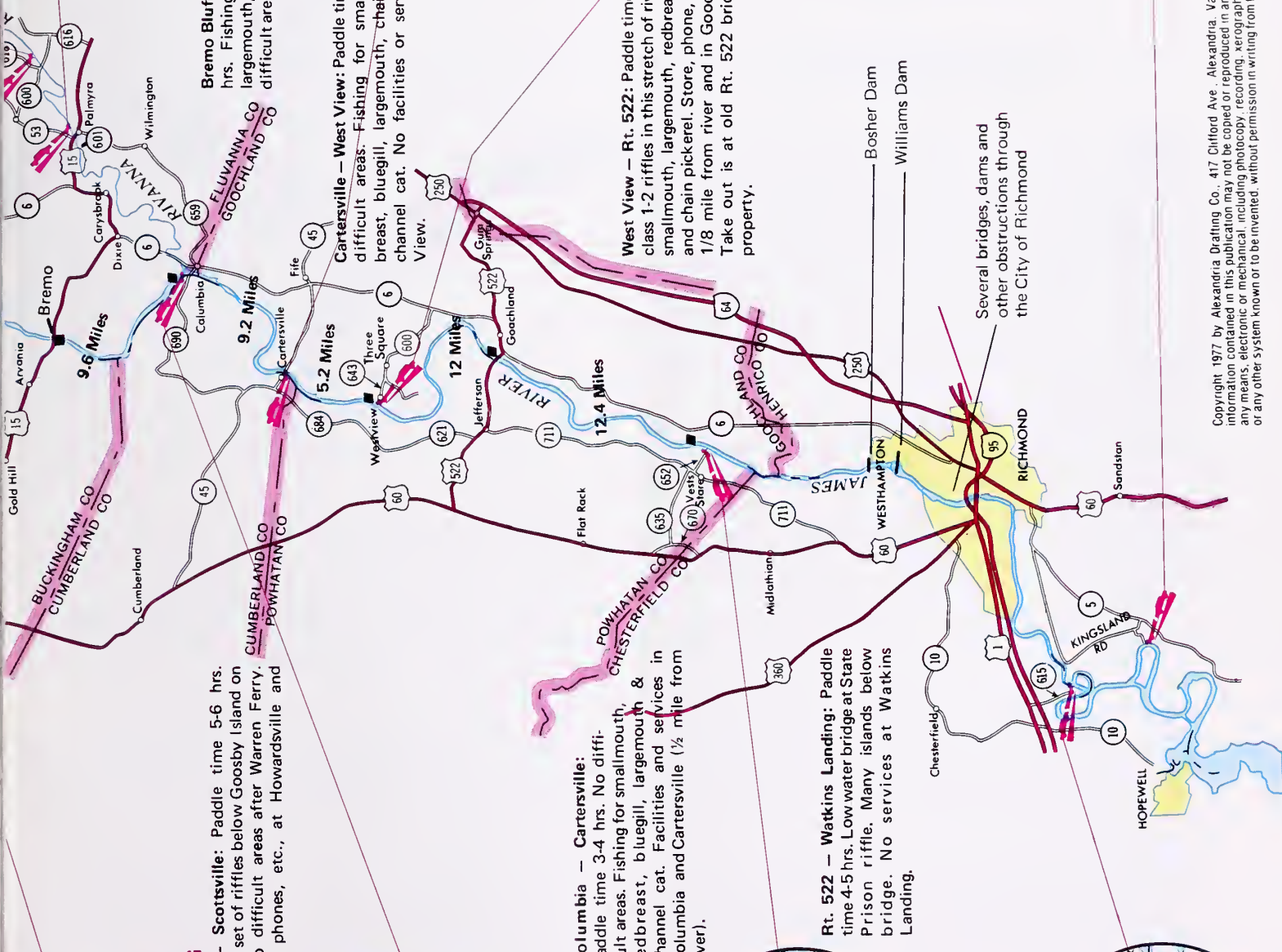


WATKINS LANDING

Rt. 522 — Watkins Landing: Paddle time 4-5 hrs. Low water bridge at State Prison riffle. Many islands below bridge. No services at Watkins Landing.

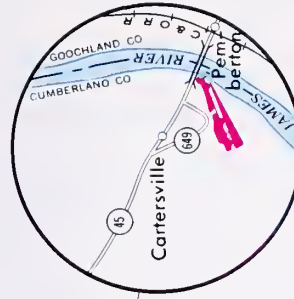


DUTCH GAP LANDING



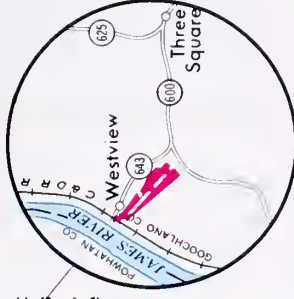
PALMYRA LANDING

Bremo Bluff — Columbia: Paddle time 3-4 hrs. Fishing for smallmouth, redbreast, largemouth, bluegill & chain pickerel. No difficult areas for canoeing.

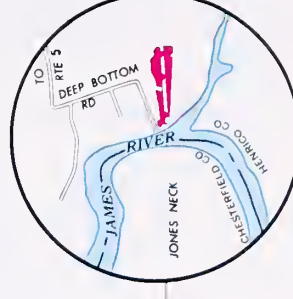


CARTERSVILLE LANDING

West View — Rt. 522: Paddle time 4-5 hrs. Some class 1-2 riffles in this stretch of river. Fishing for smallmouth, largemouth, redbreast, channel cat and chain pickerel. Store, phone, etc. in Madens 1/8 mile from river and in Goochland 1/4 mile. Take out is at old Rt. 522 bridge on private property.



WEST VIEW LANDING



DEEP BOTTOM LANDING

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The Purple Fringed Orchid

By ELIZABETH MURRAY
Illustrated by Lucile Walton

Most of our native orchids have rather small flowers, exquisite to look at closely, but not large and flamboyant like many of the cultivated ones and those from warmer climates. However, we do have one which could hold its own in any array of tropical orchids, and that is the purple fringed orchid, *Habenaria psychodes*. The flower stalk may be over three feet in height, with a showy spike 2-8 inches long comprised of numerous flowers, each up to half an inch across. It blooms in early summer in damp, open woods, usually high up in the mountains.

Many orchids are piphytic, that is, they do not use roots to draw up water and nutrients from the soil, but depend instead on rainfall, and often have special water-storage organs. About a dozen of our native orchids are epiphytes and are restricted to the southeastern part of the country. Our local *habenarias* are terrestrial, that is, they have roots which function like any normal land plant.

The orchid flower has a form unique to this family. As with their near relations, irises and lilies, flower parts are arranged in threes, but there is a marked bilateral symmetry. The three sepals look like petals. Two are alike and the third is enlarged into the *hood* which arches over the flower. Two petals are alike and may be incorporated into the hood, while the third is much bigger and considerably modified to form the *lip*. In *Habenaria psychodes* the lip is divided into three lobes, each of which is deeply fringed, hence the common name. The lip has a backward extension into a tubular, hollow structure called the *spur*. The generic name comes from the Greek word *habena* meaning a 'thong' or 'rein' and refers either to the spur or to the lip which in some species is elongated into a large strap-like structure. The reproductive organs of the orchid, i.e. pistils and stamens, are united into a single structure called the *column* which may be very large and distinctively shaped.



Orchids rely entirely on insects, and in a few instances, hummingbirds, for pollination, and the various elaborations of the flowers have been developed to attract the pollinating insects. Many species of orchids have mechanisms which will only attract one insect, another reason why the plants are hard to transplant.

Pollen grains in most orchids are clumped together into two cohesive bundles called *pollinia*. These are attached by stalks to sticky discs near the entrance to the column. When an insect lands on the lip and reaches into the column for nectar, the discs adhere to his head, and he flies off looking as if he has one or two extra antennae, which are really the orchid pollinia. Seeds of orchids are extremely light and can be dispersed by wind. On the Pacific island of Krakatoa, after the volcanic eruption of 1882 which destroyed all forms of life, orchids were among the first plants to reappear.

I wish the seeds of the purple fringed orchid would blow a little more liberally through Virginia. But in general, they are not very frequent, and should be carefully searched out, and appreciated and--please--left alone.

Conservationgram



The following is a very brief list of the 1977-78 hunting seasons. Hunters should obtain a copy of "A SUMMARY OF VIRGINIA GAME LAWS" and check the regulations for the area they intend to hunt. These regulations are effective July 1, 1977-June 30, 1978.

DEER: West of the Blue Ridge, November 21-December 3, one per year, bucks only in southwestern counties and one doe the last day in northwestern counties. East of the Blue Ridge (excepting a few southeastern counties), the season will be November 21-January 5. Bag Limit is two per year, with one doe on prescribed days (CHECK INDIVIDUAL COUNTIES).

BEAR: November 29-December 31 in northwestern counties and November 1-January 5 in southwestern counties that are open to bear hunting. In Russell County and on the Clinch Mountain WMA the season will be December 5-17. Bag Limit: 1 per year, 100 pounds live weight, 75 pounds dressed weight (entrails and internal organs removed).

TURKEY: November 14-December 31 statewide (EXCEPT where closed to fall turkey hunting). West of the Blue Ridge Bag Limit is two per year, one of which may be a hen in the fall. East of the Blue Ridge, two per year, bearded birds only. Yearly Bag Limit means only two turkeys may be taken in the spring and fall seasons COMBINED. Spring Turkey Season (BEARDED BIRDS ONLY) will be April 15-May 13, one-half hour before sunrise until 11:00 am.

FOX: November 15-January 31 (WITH SOME COUNTY EXCEPTIONS).

BOBCAT: November 7-December 31. Bag Limit: two per hunting party between noon of one day and noon the following day. Season Limit: 6 bobcats by hunting and trapping COMBINED.

GROUSE AND RABBIT: November 14-January 31. Grouse Bag Limit: two per day, ten per year. Rabbit Bag Limit: six per day, seventy-five per license year.

QUAIL: West of the Blue Ridge, November 14-January 31. East of the Blue Ridge, November 14-February 15. Bag Limit: eight per day, 125 per license year.

BOW AND ARROW: For deer, bear and squirrel, October 8-November 12. In addition, a special bow and arrow season for deer west of the Blue Ridge will extend from the closing day of gun season on December 3-January 5.

PRIMITIVE WEAPONS: Restricted to single shot, flintlock or sidelock percussion weapons. Special primitive weapons season for deer in NOVEMBER 7-12 on the Jefferson National Forest in Bedford, Botetourt, Craig, Giles (east and north of New River), Montgomery, Roanoke and Rockbridge counties, and on the G. Richard Thompson, Gathright, Clinch Mountain and Goshen/Little North Mountain Wildlife Management areas.

Licenses are sold by clerks of circuit courts and other authorized agents. The Commission of Game and Inland Fisheries does NOT sell these licenses, but will furnish a list of places where they may be obtained. Write or call: VIRGINIA COMMISSION OF GAME AND INLAND FISHERIES, PO Box 11104, Richmond, Virginia 23230. Telephone: 804-786-4974.

THIS IS ONLY A GENERAL SUMMARY. Check specific locations, state lands and military areas for further regulations. A SUMMARY OF VIRGINIA GAME LAWS, will be available upon request as of July 1, 1977 from the above address.

WILD HORSES INCREASE IN WEST

With few natural predators around, wild horse herds in the West are posing a threat to their own welfare and to the environment, according to a report made to Congress by the Bureau of Land Management and the U. S. Forest Service, the Wildlife Management Institute reports.

The report concludes that as many as 10,000 horses should be removed from federal lands annually to slow serious deterioration of the range forage needed by the horses and native wildlife. The report states that there are more than 56,000 wild horses and 7,000 wild burros roaming western public lands.

The need to control wild horse and burro populations is recognized in the Wild Horse and Burro Act. It even permits humane destruction, as long as no commercial use is made of the carcasses. Both agencies, however, have preferred to capture the horses and offer them for care by private individuals. The average cost of capturing a wild horse is \$300. That means control by capture would cost at least \$3 million annually, which is equal to about half the amount BLM currently has in its total wildlife budget. Whether tame or wild, livestock always seem to come first on the nation's rangelands. Bighorn sheep, which are listed as endangered in at least one state, and other wildlife are paying the price.

NEW MAPS OF WILD AREAS

Recently published multi-color revised quadrangle maps now picture the setting for Amelia, Elm Hill, Hardware River, and James River wildlife management areas. Roads leading to the areas as well as the positions of woodland cover, ponds, lakes, and rivers are graphically shown. The type and steepness of hills, ridges, and valleys can be determined.

These maps are part of the topographic map series which is available for the entire Commonwealth. Standard colors and symbols show the positions of buildings, roads, streams, lakes, woodland, and political boundaries. The shape and elevation of the landscape is depicted. As the maps are drawn to scale, whereby one map inch equals 2000 feet on the land surface, distances between points of interest can be determined. Recreational features such as State and Federal parks and forests are also shown.

The large fishing lake, scattered woodland for hunting and access to the Appomattox River is indicated in the Amelia wildlife area, Amelia County, on the Chula quadrangle. Outdoorsmen have extensive shoreline available along the James and Hardware rivers as shown on the Diana Mills and Scottsville quadrangles for the Hardware River Wildlife Area, Fluvanna County. The large fishing lake and access to both Allen Creek and Lake Gaston in The Elm Hill Game Managment



Dee Leftwich, 5, with a 5-pour.

Area, Mecklenburg County, can be seen on the John H. Kerr Dam quadrangle. Extensive woodlands for dove hunting as well as shoreline for fishing in the James River are available in the James River Wildlife Area, Nelson County, as shown on the Howardsville quadrangle.

All of these quadrangles can be obtained by name for \$0.78 each from the Virginia Division of Mineral Resources, Box 3667, Charlottesville, VA. 22903. If maps are desired unfolded add \$2 for each order of ten or fewer maps. An index to other topographic maps of Virginia is available on request.

—H. W. Webb, Geologist
Division of Mineral Resources

Kaleidoscope



3-ounce bass — that he caught himself!

DEALING WITH THE ROCK BASS

By JAMES WILKERSON

The rock bass is one of those fish which doesn't get much publicity. In fact, few anglers brag about catching one because this fish is usually caught while fishing for such fish as bluegill, bass, walleye or some other game fish.

Yet this worthy little panfish can provide some excellent sport and fine eating. He is a very willing biter and usually easy to catch. He is found in two-thirds of the United States.

The rock bass is a member of the sunfish family and resem-

bles the sunfish in general outline and shape. But the rock bass has a much bigger mouth and a red eye. The rock bass is also called goggle-eye, redeye, sun perch, lake bass, sunfish bass, redeye sunfish, red-eye bream, redeye perch and lots of other names.

Many rock bass are caught by youngsters with cane poles or glass poles about 10 or 12 feet long. But a fly rod, as always will provide the maximum sport with rock bass. Rock bass will hit spinner and bait combinations when cast and reeled slowly. However, most rock bass are caught on their natural bait as are any other fish — worms, hellgrammites, insects and minnows.

Unfortunately, rock bass are feeble fighters on the end of a line and "give in" quickly. But a big fish in fast water can give a few thrills on light line. Most rock bass caught are about 4-8 inches long and weigh about ½ pound or a bit more. They may reach slightly more than 2 pounds in some waters, mostly in the south.

A big 2½-pound catch was reported in the Stone River in Tennessee. Rock bass make good eating if taken from cold, clean water. Those taken from lakes and ponds or slow moving, muddy waters, especially during the summer, have a muddy flavor. Next time fishing is slow, give this fish a try; he might catch you off guard.



Peter A. Strzelewicz, who painted April's cover for VIRGINIA WILDLIFE, is offering prints of this painting and another trout (pictured above) to our readers for the remarkably low price of \$3.00 each. The print size is 11 inches by 14 inches and comes matted. If you are interested in a print of the brown trout or the brook trout, or both, you can contact the artist at this address: Peter A. Strzelewicz, Mason Road Ext., Dudley, Mass. 01570.



SALAMANDERS IN VIRGINIA

By JOSEPH C. MITCHELL

Salamanders are amphibians and, like frogs and toads, need water in which to reproduce and usually have a tadpole stage in their life cycle. Superficially they resemble lizards; however, there are fundamental differences. Unlike lizards, salamanders have a moist, non-scaly skin, no claws on the toes and no ear openings. Most are found in or near water or under moist debris or logs on the forest floor.

Salamanders are better adapted to cooler temperate environments than most anurans and are able to breed under more severe conditions. Several species breed year-round. Like lizards, they have species specific courtship patterns. Fertilization is external with the male depositing a sperm packet on the substrate and the female picking it up with her cloaca. Eggs are usually laid in moist humus, logs or attached to objects in the water. In most cases, there is no parental care; however, some females guard the eggs until they hatch.

Food sources are insects, worms, crayfish and other invertebrates. Larger forms eat smaller forms.

No salamander is poisonous, although the amphiuma will bite hard if molested. Most will not bite at all. Some species, especially the newts, are noxious when eaten by predators, this due to skin-gland secretions.

Thirty two species are found in Virginia, many of them with one or more subspecies. *Ambystoma*, Mole salamanders. These are underground forms coming to the surface only during the breeding season. Jefferson salamander, *A. jeffersonianum*, is a slender, long-toed dark brown to gray species with small bluish flecks on each side. Breeds in early spring. Size: to 8¼ inches. The Spotted salamander, *A. maculatum*, is a stocky form with round yellowish spots on a black body. Breeds in early spring. Size: to 9 inches. Marbled sala-

manders, *A. opacum*, are smaller, to 5 inches. Usually black with silvery irregular crossbands. Breeds in the fall. The largest of the group, the Tiger salamander, *A. tigrinum*, has been found only in York Co. but is thought to occur in the entire Coastal Plain. Body color is black to dark brown with olive to yellowish-brown elongated spots that extend onto the sides. Breeds in early spring. Size: to 13 inches.

Aneides aneus, Green salamander. A small green species with markings that look like lichen on a dark background. Prefers damp rocky habitats. Probably breeds in spring. Size: to 5½ inches.

Amphiuma means, Two-toed Amphiuma. A salamander that looks like an eel with two pairs of tiny legs, each with two toes. Coloration dark brown to black. Completely aquatic in ditches, ponds and streams but may move overland on humid nights. Breeds in the spring. Size: to 40 inches.

Cryptobranchus alleganiensis, Hellbender. This is a large, ugly form with a flattened head and folds of skin on each side of the body. Color varies from black to yellow-brown with scattered irregular spots. Found in swift, rocky streams and rivers. Breeds in September. Size: to 29 inches.

Desmognathus, Dusky salamanders. Members of this group inhabit seepage areas, small streams and springs. Most are in debris or under rocks along the edge of the water. Absent from waters where fish occur. To identify this group look for a pale line running from the eye to the angle of the jaw, (see Fig. 1). It is thought most of these breed year-round. The Northern Dusky salamander, *D. fuscus*, is gray to brown with a wavy pattern down the back, has gray mottling on the belly and a flattened tail. Size: to 5 inches. Seal salamanders,

D. monticola, resemble Dusks except for being more robust, having a darker pattern and a plain belly. Usually has a single row of light spots on each side. Size: to 5½ inches. Mountain salamanders, *D. ochrophaeus*, have a straight-edged, light stripe down the back and tail with a row of chevron shaped spots in the center. Size: to 4 inches. Like its name the Black-bellied salamander, *D. quadramaculata*, has a black belly and is larger, to 7 inches. The smallest of the group, the Pigmy salamander, *D. wrighti*, is brownish with a broad light stripe down the back. Prefers rotten logs on the forest floor. Size: to 2 inches.

Eurycea, Brook salamanders. These are slender, striped salamanders found in small streams and springs. Most have some yellow pigment. The Two-lined salamander, *E. bislineata*, has a broad yellow stripe on the back bordered by two dark lines. There may be some peppering in the stripe. Often found under objects in moist woods. Breeds in spring. Size: to 4½ inches. The longtailed salamander, *E. longicauda guttolineata*, have three dark stripes on a yellow to tan body. Size: to 7 inches. The Cave salamander, *E. lucifuga*, is reddish with a pattern of irregular black spots. Found in the twilight zone of caves and under objects around them. Probably breeds in summer. Size: to 7 inches.

Cyrinophilus porphyriticus, Spring salamander. A cloudy, grayish to tan species having varying amounts of darker pigment. Prefers springs and moist unpolluted areas. Probably breeds in spring. Size: to 8½ inches.

Hemidactylium scutatum, Four-toed salamander. Associated with sphagnum areas and boggy woodlands. Color is brownish-red with black spots on a white belly. Four toes on the hind feet instead of five. Breeds in late summer. Size: to 3½ inches.

Leurognathus marmoratus, Shovel-nosed salamander. A high elevation form found in stony, mountain brooks in southwest Grayson County. Body color grayish with either a light zigzag pattern or a double row of irregular blotches. Breeds in spring. Size: to 5 3/4 inches.

Necturus, Mudpuppy and Waterdogs. Entirely aquatic forms with external gills. The Mudpuppy, *N. maculosus*, inhabits permanent bodies of water in the western part of the state. Grayish to rust-brown with irregular spots. Breeds in fall. Size to 17 inches. Waterdogs, *N. punctatus*, inhabit sluggish, muddy or sandy streams in southeast Va. Plain blackish above with a white throat. Probably breeds in spring. Size: to 7¼ inches.

Notophthalmus viridescens, Red-spotted Newt. This species has a three stage life cycle. The larvae usually transform into a terrestrial stage, called the red eft, which later develop into the aquatic adult. Efts are found under objects or walking about the forest floor. Adults inhabit almost any permanent body of water. Adults are green with red spots and efts are reddish with dark spots. Skin is rough. Breeds in the spring. Size: to 3½ inches.

Plethodon, Woodland salamanders. Primarily terrestrial, inhabiting moist woods. Found under all

types of objects. Eggs are laid in soil or moist logs and there is no aquatic stage. The Red-backed salamander, *P. cinereus*, occurs in two color phases; either a broad reddish or lead colored stripe on a black body. Breeds October to April. Size: to 5 inches. Slimy salamanders, *P. glutinosus*, are black with varying amounts of silvery-white flecks. They emit sticky secretions from skin glands when handled. Breeds in spring and fall. Size: to 7 inches. Valley and Ridge salamanders, *P. hoffmani*, are lead colored with a white throat, dark belly and some white mottling. Breeds in spring and summer. Size: to 5 inches. Appalachian Woodland salamander, *P. jordani*, are plain black with a light gray throat and belly. Breeds in August. Size: to 5¼ inches. *Plethodon nettingi* occurs in Virginia as two subspecies; *P. n. hubrichti* on the Peaks of Otter and *P. n. shenandoah* on high peaks in Shenandoah National Park. Both are black with some of the dorsal metallic pigment in spots, blotches or stripes (Peaks of Otter) or plain black with a reddish, sometimes indistinct, stripe (Shenandoah). Probably breeds in spring and summer. Size: to 4 inches. Cow Know salamanders, *P. punctatus*, are gray to brown with white or yellowish-white dorsal spots. Probably breeds in spring. Size: to 6 inches. Ravine salamanders, *P. richmondi*, are found on wooded slopes of valleys and ravines. Blackish with sprinklings of bronze flecks. Breeds in spring and fall. Size: to 5½ inches. Wehrle's salamanders, *P. wehrlei*, have a row of irregular whitish spots on each side of a black or brown body. The throat is white or blotched with white. Breeds in spring. Size: to 6¼ inches. Weller's salamanders, *P. welleri*, are small black forms with golden or silvery blotches. Belly is spotted with white or black. Breeds in fall. Size: to 3¼ inches. Yonahlossee salamanders, *P. yonahlossee*, have a red or chestnut stripe down the back and a white or gray stripe on each side below it. The head and tail are black and may be marked with light specks. Probably breeds in spring and summer. Size: to 7 inches.

Pseudotriton, Red and Mud salamanders. Both are reddish salamanders having various amounts of black pigment. The Northern Red salamander, *P. ruber*, inhabits unpolluted springs, seepage areas and mountain trickles. The black spots are irregular and the iris of the eye is yellow. Breeds in the fall. Size: to 7¼ inches. Mud salamanders, *P. montanus*, inhabit muddy areas of springs and seepages. The black spots are circular. Breed fall — winter. Size: to 7 inches.

Siren lacertina, Greater Siren. Looks like an eel but has gills and forelegs. No hindlegs. Coloration is generally plain grayish. Found in shallow water such as ditches, streams and ponds as long as there is vegetation. Entirely aquatic. Probably breeds in spring. Size: to 36 inches.

Stereochilus marginatus, Many-lined salamander. A dull brownish species usually with a series of dark longitudinal lines on each side. Belly yellowish with some dark specks. Found in sluggish water in swampy areas. Breeds in spring. Size: to 4½ inches.

The Virginia Herpetological Society is gratefully acknowledged for its help with the distributions and illustrations.

JEFFERSON SALAMANDER (A. Jeffersoniaum)



TIGER SALAMANDER (Ambystoma Tigrinum)



GREEN SALAMANDER (Aneides Aneus)



MARbled SALAMANDER (A. Opacum)
Entire state except Eastern Shore



SPOTTED SALAMANDER (A. Maculatum)
Entire state except Eastern Shore



HELLBENDER (Cryptobranchus Alleganiensis)



NORTHERN DUSKY SALAMANDER (Desmognathus F)
Entire state except Eastern Shore



TWO-TOED AMPHIUMA (Amphiuma Means)



MOUNTAIN SALAMANDER (D. Ochrophaeus)



SEAL SALAMANDER (D. Monticola)



BLACK-BELLIED SALAMANDER (D. Quadramaculata)



PIGMY SALAMANDER (D. Wrighti)



TWO-LINED SALAMANDER (E. Bislineata)
Entire state



LONG-TAILED SALAMANDER (Eurycea Longicauda longicauda)



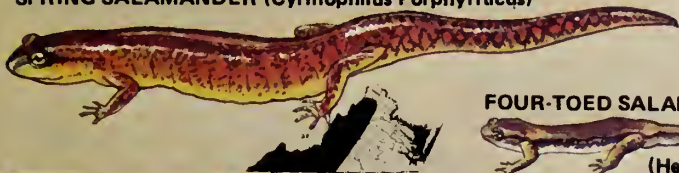
THREE-LINED SALAMANDER (E. Longicauda Guttolineata)



CAVE SALAMANDER (E. Lucifuga)



SPRING SALAMANDER (*Cyrinophilus Porphyriticus*)



SHOVEL-NOSED SALAMANDER (*Leurognathus marmoratus*)



FOUR-TOED SALAMANDER



(*Hemidactylium scutatum*)

Entire state except Eastern Shore



MUDPUPPY (*Necturus Maculosus*)

WATERDOGS (*N. Punctatus*)



RED-SPOTTED NEWT (*Notophthalmus Viridescens*)



RED-BACKED SALAMANDER (*Plethodon Cinereus*)

Entire state



SLIMY SALAMANDER (*P. Glutinosus*)

Entire state except Eastern Shore



RAVINE SALAMANDER (*P. Richmondi*)



WEHRLE'S SALAMANDER (*P. Wehrlei*)



METCALF'S SALAMANDER (*P. Jordoni Metcalfi*)



WELLER'S SALAMANDER (*P. Welleri*)



YONAHLOSSEE SALAMANDER (*P. Yonahlossee*)



NORTHERN RED SALAMANDER (*Pseudotriton Ruber*)

Entire state except Eastern Shore



GREATER SIREN (*Siren Lacertina*)



MUD SALAMANDER (*P. Montanus*)



MANY-LINED SALAMANDER (*Stereochilus Marginatus*)



KUTZ

STRIPERS FOR THE FUTURE

Each of the three man crews has a specific job to do. The man in front controls the electrode while the man standing in the middle handles the bulk of the netting duties. The man in the stern handles the generator, guides the boat and assists with the netting of stunned fish.





A hatchery worker inspects a sample of water from a spawning tank. The water is sucked up into a glass tube so that close inspection can be made of the eggs in the tank. These inspections are made daily.

By CARL "SPIKE" KNUTH

(Technical Assistance by Bill Neal and Larry Hart)

May brings balmy breezes, blossoming trees, migrating birds and spawning striped bass. To Virginians, this saltwater transplant goes by the name of "rockfish." Thousands of these landlocked "stripers" weighing up to 35 pounds are annually drawn upstream through the currents of the Staunton River from Buggs Island Lake in the spring, often traveling as many as 50 miles.

The progenitors of these fish were migrants from the sea which became landlocked when the gates were closed on the John H. Kerr Dam to form Buggs Island Lake. The Staunton River was to provide them with suitable spawning waters, making Buggs Island Lake the only Virginia lake — and one of a handful in the nation — with a self-sustaining population of these ocean transplants.

It is in the swift, upstream waters of the Staunton near Brookneal that stripers come to deposit their floating eggs. Virginia anglers converge on the river from all over the state, and out-of-state, during May and June in hopes of landing one of these striped, silver-sided beauties.

However, fishermen aren't the only ones trying to capture the spawning stripers. Biologists of the Commission of Game and Inland Fisheries' Fish Division are there too, to collect rockfish for their eggs and assure the future of this popular sport fish. About 50 million rockfish eggs are taken annually with 800,000 fish raised to fingerling stage, then released into more than

15 Virginia lakes and tidal rivers. The scenic Staunton is the only river that provides spawning rockfish with the 45 to 60 miles of free-flowing water necessary to keep fertilized eggs suspended until hatching.

As soon as the rockfish begins its spawning activities, the Commission's hatchery at Brookneal becomes a beehive of activity. Special spawning tanks are prepared for the hundreds of rockfish that will utilize them and as many rearing troughs for the resultant fry to spend their first days of life. Nets, raincoats, boots and other gear are repaired and readied for action. A 16-foot jon boat is specially rigged with a small gasoline engine and generator to be used for shocking up fish. The outboard-powered jon boat with a three man crew is guided downstream near shore. An electrode wired to the generator and mounted on a long, sturdy cane pole is submerged, sending an electrical charge into the surrounding water. Any fish within 10 or 15 yards or more are stunned and quickly netted.

As the stunned fish surface, they are netted and the pickup boats which had been standing by move in. These boats are operated by local "river rats," gutsy young men who know the river, its currents, obstructions and how to handle a boat in them. The pickup boats are equipped with built-in live boxes. They rush up to receive the netted fish, put it in the live box and exchange nets. Very often the fish are located near white water or close to shore amid tangles of fallen trees, so teamwork between men and boats is a must during periods of fast and furious action.

After he has two or three fish, the pickup boat operator makes a dash up or downstream to the



A fish biologist gives a striper an injection of X hormone, which will speed up the spawning process.

hatchery. The fish are quickly removed to the hatchery where the fish's condition is checked. If female, an egg sample is taken and inspected under a microscope to determine its growth stage. Females are chosen according to the development of their spawn. The spawn samples are rated from 0 to 6 by biologists, according to their stage of development. Those females whose eggs are in the early stages of development cannot be utilized and are immediately returned to the river.

After a fish is inspected and its condition determined, it is given an appropriate injection of X hormone which induces or speeds up the spawning process. The fish is then placed in large, round spawning tanks. A record is kept of each fish — its sex and weight — as it is placed. Males are easier to come by and their milt development not as crucial, so they are often put in holding tanks until they can be matched with the proper females.

Originally, eggs and milt were stripped by hand and placed in spawning jars. This procedure has been abandoned in favor of collecting "ripe" fish and having them to spawn more naturally, although in captivity and under controlled conditions — a system developed in Tennessee.

Generally four males are matched with two females in the spawning tanks. The purpose of the two-to-one ration is to assure fertilization. Since it is possible for some to be sterile, this protects against failure which would negate considerable time and effort.

The spawning tanks are circular — about 8 feet in diameter — and are fed a constant flow of river water by means of a pump and through a series of pipes and rubber hoses. This creates a clock-wise moving current which moves at exactly one-half-foot per second and simulates the natural river flow. A couple of measured marks on the tank's edge aids the attendant in gauging the current's speed. Water temperatures are kept at about 64° — two degrees higher than normal river temperatures. Four unique hot tank heaters — the

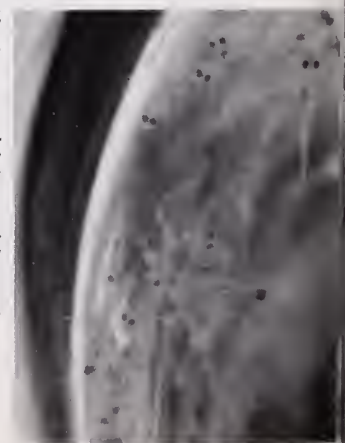
equivalent of twelve home hot water heaters — enable hatchery culturists to maintain necessary water temperatures. An attendant sees to it that water temperatures and water levels are maintained.

After about 30 to 35 hours, the fish begin to spawn. Spawning times are carefully noted for each tank. After spawning the females are returned to the river, while the males are held a while longer to assure fertilization and to keep the eggs agitated. A screen shields the eggs from the drain in the center of the tank, and jets of air at the bases of the screens constantly send bubbles rising to the surface, preventing the eggs from sticking there.

At first the eggs sink, but after a few hours they become semi-buoyant. The jets of water maintain a simulated river current, keeping the eggs suspended. The egg itself is a microscopic "pinhead" when first released. It swells to 100 times its original size as its shell absorbs water. This creates a watery cushion around the embryo which protects it as it drifts and tumbles in the current and gives it the proper buoyancy.

Bill Neal, Fish Management Field Coordinator and originator of the Game Commission's striped bass program points out that, "Actually the egg itself is a sophisticated, complex organism. It has a tiny globule of oil which is buoyant and is attached to the embryo. The globule of oil acts to keep the embryo (or yolk) in an upright position at all times. Just as a gyroscope keeps a space capsule from rolling, yawing or tumbling through space, the little globule of oil keeps the egg yolk in a proper attitude as it floats in a swift, tumbling current."

Natural spawning takes place in the river's center. Spawning stripers seem to lose all fear of any objects. They are concerned wholly with their spawning duties. Frequently they'll run right into the bottom of a boat! In



It's hard to believe that these tiny wierd-looking fry will one day be lunker striped bass in one of Virginia's fishing lakes.

one sense, however, the females are quite docile during their spawning runs and do not feed very heavily — even less so as actual spawning time draws near. The males, on the other hand, have a tendency to be very pugnacious and are likely to strike in anger rather than from hunger. A school of spawning stripers may often number three or four females and as many as 100 males. River anglers refer to these schools as a “rock fight.” Naturally spawned eggs are carried downstream and hatch in 36 to 72 hours.

Back in the spawning tanks, egg development is frequently checked and after about 30 hours, the eggs begin to hatch. The hatching dates for each tank are carefully noted on a big blackboard. The fry look like small hairs with a pair of dots at one end. It seems inconceivable that these tiny creatures may one day grow to a weight of 35 pounds!

In a day or two, a funnel-shaped wire screen with a large diameter hose attached to the small end, is hung on the inside of the tank. A siphon is set up which draws all the fry from the tank into long, white trough-like tanks. These “fry tanks” hold up to three million tiny fry. The newly-hatched fry live on their yolk sac for five to six days.

Those fry to be reared in Game Commission holding ponds are fed a brine shrimp culture from their sixth to their tenth day. They are then shipped to either the Front Royal or Stevensville rearing stations, or remain to be reared in the Brookneal rearing ponds. They are held in the rearing ponds up to six weeks until they are two to three inches long, at which time they are removed from the rearing pond. The pond is drawn down and the fingerlings netted and removed to be stocked in a number of Virginia lakes with little or no natural spawning areas.

Smith Mountain Lake is the latest Virginia water to literally explode with these fish as anglers began taking hundreds over the ten pound mark in recent years. Yearling fish grow to eight inches while two-year-olds reach eighteen inches — a most phenomenal growth rate. The growth rate tapers off in the third year, with fish reaching twenty-four inches with slower growth rates in succeeding years.

Not all striper fry end up in Virginia waters. Some fry are traded to states such as Iowa, Kansas or Kentucky, or the Federal government, for walleye and northern pike eggs and occasionally for muskies and



A batch of newly-hatched fry are transported to a Game Commission rearing station, where they will be carefully fed and watched until they are 6 weeks old.

trout which are then stocked in Virginia waters. These particular fry are packed in heavy, water-holding plastic bags and Styrofoam boxes, fed a portion of brine shrimp, and shipped off to their respective destinations.

“Actually,” Neal points out, “The striped bass program supports a great portion of Virginia’s warmwater fisheries program through the trading, and up to 25% of the fry sent out are returned anyway to be stocked in Virginia waters after being raised to fingerling size.”

The area of the Staunton River critical to striped bass reproduction has been tentatively designated as a scenic river by the state legislature. In addition, a new 50 million egg-capacity hatchery is in the final stages of construction at Brookneal. With the completion of the Brookneal Striped Bass Hatchery, built with Virginia angler’s license money, plus the preservation of the striper’s spawning habitat, the continuation of this fabulous fishing resource will be assured and Virginians will be able to look forward to having stripers for the future.



The Bird Tree



By JOHNNY HALL

There was a robin's nest in it when we moved into the house ten years ago. There is one in it now. In the intervening years the pyracantha (Firethorn) adjacent to our rear door opening onto the patio has been a constant source of pleasure to my family and a virtual highrise apartment for the local birds.

Every year since 1966 at least one pair of birds have nested in the tree and usually more. This has been an especially busy year. Because of the unusually warm weather in February, a pair of mourning doves began building a nest in its upper branches the last week of the month. For a dove nest it was a substantial affair. And as later events proved it was a good thing that it was well built. Twenty-four days after the second and last egg was laid the chicks hatched. By this time the weather had reverted to what could be expected in early March-- rain, wind, and cold--poor conditions for baby doves. The pyracantha was an excellent nest site for these conditions since it was partially protected by the house and its thick thorny foliage offered additional protection.

The adult birds were ideal parents. Until the two chicks were almost ready to leave the nest, one or the other of the parents stayed on the nest affording additional warmth and shelter. Usually the parents would swap places early in the morning and late in the afternoon with the one arriving at the nest giving the chicks a good feed of pigeon's milk.

We never observed the young birds leave the nest, but it occurred on the tenth day after they hatched. A few days later we saw a young dove at the feeder in the front yard and assumed it was one of our "pyracantha babies." We never saw but one of the young and decided that the other one had fallen prey to one of the local cats. As long as the birds are in the pyracantha no cat will dare attempt to catch them, but once out they are fair game.

The tree did not remain empty long. A pair of blue jays built a nest on a lower limb of the tree between the 20th and 25th of March and laid five eggs. Meanwhile

the doves returned to their nest and laid two eggs, one on the 29th and one on the 30th.

The blue jay nest was in the birds' favorite nesting spot in the tree. It is about seven feet above the ground directly over the patio and on a limb fork which provides an excellent base for a nest. Last year blue jays, robins and doves attempted to build there at the same time. Each time one bird would catch another one there, a fight would ensue. My money was on the jays, but after about a week of skirmishing the doves wound up with the nest. Unfortunately after ten days it was broken up by what I suspect was grackles. In any case, a pair of doves later had two successful broods in the tree.

Like the dove nest in 1975, this year's blue jay nest was broken up and I again suspect grackles. The second dove nesting was successful, and "my little flock" increased by two, and I expect three new robins any day now.

"My little flock" is the birds I feed from October through April in the front yard where I can observe them through the large dining room window. The doves are my favorites. Perhaps because they are my favorite game bird. Cynics would probably say that I feed them because I have a guilt complex from hunting them. My answer to that is why feed cardinals, song sparrows, juncos, red-wing blackbirds and others. The two hundred pounds of feed I use per year is for all birds because of the pure enjoyment of watching them all.

Although I live on a quarter-acre lot, by attending to a few simple details I have increased both the number and variety of birds using the area. Stated simply, birds require cover, food and water. To provide water I bought and installed a small bird bath in a sunny spot in the back yard. Food is mostly natural during late Spring through early Fall when worms and insects are plentiful. This is supplemented by our small plot of strawberries, a grape vine, and a few sunflowers. We originally planted the grapes and strawberries for our own use, but we never begrudge the birds a share. After all, I can buy grapes and strawberries at the supermarket, but where can I buy the antics of a catbird, the song of a mockingbird or the beauty of a cardinal? Summer cover is provided by a variety of trees and shrubs which include quince, azalea, and lilac bushes and apple, plum, maple, peach and weeping willow trees. During the winter shelter is provided by the pyracantha, a honeysuckle vine and a large spreading juniper. In addition to the three dove and single robin's nest in the pyracantha last year, we also had seven other nests in the yard. These included doves, robins, song sparrows, mockingbirds and catbirds.

I have another pyracantha planted which is blooming for the first time. It will have enough berries in October to make the mockingbirds happy and in just a few years I will have another apartment tree for "my flock."

Personalities

Edited by F. N. Satterlee



GORDON H. SOUDER, Refuge Supervisor

Gordon Souder is a quiet, competent, acutely perceptive and extremely dedicated, gentle man. His profession is that of a Refuge Supervisor and his responsibilities involve the 175,000 acre area which comprises the Lee and Dry River Ranger Districts of the George Washington National Forest. The Game Commission and the Forest Service have a long standing cooperative arrangement pertaining to game management on those lands.

Gordon was born in Mathias, West Virginia, where his father was a general farmer. Growing up on the land instilled an early and deep appreciation of things wild and, for Gordon, this has been enhanced many times over the years.

Following graduation from Mathias High School, he joined the Civilian Conservation Corps. In addition to working all day, he spent three nights a week in school taking courses in forestry, landscaping and other related subjects. After three years he left the CCC and worked for a time in construction work in Washington, D.C. About this time (early 1941) the United States

was beginning a slow buildup of Armed Forces. Gordon knew he was to be drafted, and rather than wait a year or so to be called, volunteered to go in early. In May of 1941 he was assigned first to Camp Wheeler, Georgia and later to Fort Jackson, South Carolina, where he was when the Pearl Harbor debacle took place.

After completion of commando training, he went to the Pacific Theater. There he participated in the Buna, Hollandia and Biak Campaigns and in the Philippines as a member of a Specialized Service Unit.

Following discharge in December of 1945 he spent 1½ years on the Harrisonburg, Virginia Police Department before joining the Game Commission in 1956.

Gordon's greatest satisfaction with his work is that he can be outside working with nature and wildlife, and that he can help to pass on his understanding and feeling in this regard to the veteran and budding sportsmen alike. He feels privileged, also, to be associating with such dedicated co-workers. He and his wife, the former Tressie Grimsley from Shenandoah, have three children and make their home in Mauzy, Virginia.



Reticulated Giraffe

"Harriot," the Ostrich has a temper. If riled, she will kick offenders.



"Torn Ear," the Sitatunga is one of variety of African Antelopes.

By JOHN BEARD

It all started this morning at the small safari village. Now, as you slowly approach that rare Bengal tiger, your camera hand shakes just a bit. The memory of the tiger's reputation as a fierce and powerful hunter gnaws at your insides. You realize for the first time that you'll be passing within inches of the crouching beast. The time is approaching—it's now or never! The shutter clicks and you sit back, relieved.

"Wait a minute," you're thinking. "What is this? I thought this magazine was about Virginia's wildlife."

Well, believe it or not, this article is about Virginia wildlife. The safari account above is one repeated hundreds of times daily in Doswell, Virginia at Lion Country Safari.

As a visitor, you can travel through the serenghetti where African elephants, ostriches, giraffes and many different antelope forms roam. From there, you are taken into the Zambezi River section where hippos, zebras and white rhinos greet you. Young of the year are abundant. Suddenly, you hear your guide's warning to remain still and quiet. You are entering the Kahna preserve — home of the Bengal tiger. Nine of these magnificent, endangered animals can be seen, playing, catching frogs and fish and lazing restfully in the sun. Don't be deceived. The tiger can move with the speed of lightening and can bring down a speeding antelope with a



An endangered Bengal Tiger

All paintings in this article were executed by Michael J. Bily. Mr. Bily worked at "Lion Country Safari" and drew the animals he saw daily from life. While he is on a first-name basis with most of the creatures he shows in his artwork, his paintings are available for sale by contacting the artist at: 10124 Purcell Road, Richmond, Virginia 23228. Phone 804/262-2340.

Resting Rhinoceroses. While napping, rhinos form a circle in order to guard themselves from all directions.





A male lion, a sleepy King of Beasts.

single crushing blow from his great paw. Then, once more, you hear your guide's warning to remain still. You are entering the land of Simba-King of Beasts! As you look around, you see lions on every side. Some are running, some resting, and occasionally some are fighting. Their growls chill to the bone. Some peer into your window! This is their land — it is you who are on display.

Last summer, I had the unique opportunity of serving as a Ranger at Lion Country Safari in Doswell, Virginia. A Ranger's job includes caring for, feeding, and protecting the animals while assuring that all are in view for the visitors who ride through the preserve in electric monorails. To visitors, the Ranger's job looks easy riding in the zebra-striped jeeps. Behind the scenes, however, it is anything BUT easy.

My first day at work, I was assigned the job of "wrapping" the trees in the rhino section. That job entailed tacking chain-link fence around the tree bases to prevent the rhinos from cutting the bark with their "horns." As I was wrapping a small tree, I heard a noise and looked up, only to find myself surrounded by at least a dozen white rhinos. Remembering that Tarzan always

climbed a tree in such instances, I hastily made my way up the tree. I was wrapping and waited until the rhinos went away. Little did I know that my first day was but an indicator of weeks to come!

Once when I got out of the jeep, I made the mistake of leaving my door open. While I was busy wrapping trees, I heard the sound of ripping metal. I turned to see the door of the jeep being ripped off by "Bumper" the rhino who thought that the door was a great plaything. I had been warned about Bumper. Bumper was a friendly white rhino who loved to be scratched on the head and on the inner legs. However, Dan Henry (a fellow Ranger) had gotten too close and when Bumper turned her head, she sent Dan to the hospital for stitches. I went over to retrieve the door but Bumper wouldn't move without having her ear scratched. I began scratching only to find that Bumper's mate didn't approve. He came over in great haste and once more I was forced to play Tarzan and wait him out.

When the rhinos weren't causing trouble, the ostriches were. During my early days at King's Dominion, I was warned that the ostriches loved to kick Rangers. Not wanting to

prove this correct, I gave the ostriches wide berth in my comings and goings.

When the egg laying season began, I spotted an ostrich egg on the peak of a hill and was sent to retrieve it by Art Wotz, the senior Ranger. I scanned for any ostriches that might be in the area and, satisfied that there were none, began walking up the hill to collect the egg. As I reached the top, I was spotted by "Bob," the dominant male ostrich. Bob was as determined to defend the egg as I was to retrieve it. I grabbed the egg and sprinted toward the jeep with Bob in hot pursuit. I made it to the cover of the jeep only to find Art laughing too hard to open the door. A quick game of "run around the jeep" formed. Finally, Art opened the door and, as I jumped in, Bob kicked the jeep as a warning against future intrusions of his territory.

Eventually the day came when both the rhinos and the ostriches ganged up on me. This, I feel, was planned by the animals in advance. The animals are separated by a fence with several gates which allows animals to occasionally run from one section to another. On this particular day, a rhino had gotten into the ostrich section. I left my jeep and set out on foot to chase the misplaced rhino back into his section. The chase wore on but finally the rhino ran back into his section. As I stood on the hill top admiring my work, I saw that I had been duped. Coming up the hill from all three corners were male ostriches, lazily trotting, secure in the knowledge that I was trapped. However, luck was with me as a monorail entered the section. I raced for the safety of

the monorail and once more managed to elude the ostriches by only a matter of seconds.

Because King's Dominion's six elephants loved to play, swim and make mischief, someone had to stay with them to assure that they would cause no damage. I spent many hours watching them play like children. However, like human children, they weren't content until their baby sitter had been taught a lesson. Often, as a friendly gesture, I would wave at visitors on the monorail. The elephants would chose this time to fill their trunks with water and hose me down. Perhaps, thinking that they hadn't done enough, they would then attempt to swim to Flamingo Island to play with the waterfowl. Usually, a verbal command would bring them back. However, one day, the elephants were determined to make it to the island. I grabbed a plastic boat and launched myself toward the island only to find that, due to a large hole in the bow of the boat, I was sinking. As I sank into the pond, the elephants, convinced that I had learned my lesson, returned to their peninsula to be fed.

Eventually, I got stationed in the lion-tiger area. Things went well there until one rainy night when I drove my jeep up onto a mud bank only to find myself stuck. As I attempted to push the jeep down the road, it began to slip and I could only watch as

it tumbled over the bank and down into swampy mud below.

Later with a new jeep I was again in the lion-tiger section. Lightning was illuminating the sky and the thunder was deafening. As the lightning brightened the area, I would count tigers to make sure that every one was accounted for. However, I kept coming up one tiger short. Suddenly, the jeep was hit hard and I turned to see a tiger paw reaching through the bars in the back of the jeep. I jumped to the passenger side and picked up my BB pistol and bounced a BB off the tiger's nose. Aggravated, the tiger left.

Eventually, summer came to an end and Lion Country Safari closed for the winter. Thousands had seen the peaceful order of animals and had been content. I had survived an exciting and fulfilling summer and was now ready to spend the winter with memories of a dream come true.

Working with these animals is indeed a unique experience. How many people can truthfully claim that they have been chased by a llama who has a "thing" for Rangers? Who else can tell about climbing fences to flee a jealous rhino. And who can explain a bruised leg as being the result of a kick from an angry ostrich who was defending an egg?

However beyond



A bachelor herd of Zebras.

these and other common jobs (including breaking up lion and tiger scuffles, delivering animal babies, and baby sitting the elephants), the Rangers bear an even greater responsibility. The animals are observed daily by the Rangers in charge and daily reports are made to Larry Mather. Any health problems, unusual behavior patterns, etc. are reported to Dr. Robert Barton, head veterinarian, who is responsible for the health of each animal. The two sets of data are then tabulated for the files.

In this manner, records representing years of research are building up. Much is being learned here and will continue to be. Management techniques, birth control in the wild, and other research projects are constantly underway. In years to come, this transplanted Africa may be the proving grounds for wildlife management techniques to be used on Virginia's native wildlife.

In the meantime, this little bit of Africa is yours to enjoy in Virginia. .

and bring your camera. I'd like to introduce you to some of my friends!



After being penned up all winter, the elephants take advantage of their first spring bath to ham it up.

Fly Fishing in Virginia



With practice, flyrodding while floating along some of Virginia's lesser known streams, can be a rewarding experience.

By PETE ELKINS

After several years of eclipse, fly rods are enjoying a renaissance in angling circles. Virginia offers a watery cornucopia of fly-rodding opportunities from the hemlock-shaded pools of a mountain "native" trout stream to the unlimited horizons of the Chesapeake Bay and Atlantic Ocean.

There are still wild streams in Virginia. These tiny streams, often no more than step-across rivulets, harbor *Salvelinus fontinalis*, the trout that our grandfathers and their grandfathers before them knew as "natives." *Salvelinus* demand a cool, shaded, absolutely pure habitat, necessarily removed from the normal haunts of man.

Fly fishing these tiny streams is a lesson in either frustration or loving precision. A first experience will likely end in frustration. Hemlock needles will devour

backcasts. Stream rocks and boulders will subtly remove the hook point of a fly. Waders will rip in protest at the often necessary crouching crawl within range of a crystalline pool. Yet, if you persist, the frustration will dissipate with the green-gold flash of an eight-inch brookie taking your fly.

Fly rodders, prefer ultra-light rods, gossamer leaders in the 5x to 7x category, and any of the standard Eastern dry fly patterns such as Adams, Royal Coachman, Black Gnat, or Quill Gordon.

The lilliputian nature of "native" tackle is part necessity and part deference. Short rods are necessitated by the close quarters of a typical mountain stream. Still, brook trout, although occasionally leader shy, are not the mental equals of their brown or rainbow cousins. Generally, if the fly is within range, and the fish isn't frightened by the angler's approach, a rise is almost assured. Despite the splendor of their surroundings and their physical beauty, Virginia's

brookies are a shade too small to be great fly-rod targets. The satisfaction of hooking and releasing a native trout on a fly-rod is primarily cerebral, not muscular.

Virginia's muscle types inhabit warmer waters at lower elevations. In terms of sheer popularity, largemouth bass are undoubtedly Virginia's most important inland game species. At the same time, the largemouth has received the brunt of the "broomstick" tackle fad. Yet, few fish are as eager to engulf a fly-rod offering. Admittedly, mid-summer is a tough time for the feather merchant and his long rod except for all too brief periods early and late in the day.

But spring and fall atone for a slow summer. Big brushy, "cover" infested lakes like Buggs Island and Gaston afford excellent spring fly-rod action.

Largemouth bass dote on large surface bugs and slinky streamers. A well-equipped angler waving a long rod at the willow-entrenched bass of Buggs Island will be using an 8½ or 9-foot fly-rod, weight forward line, probably a WF-8F or WF-9F, terminating in a seven or eight-foot tapered leader, with a tippet strength of 10 to 15 lbs. In less snag-infested waters or on farm ponds, a lighter rod throwing a 7 or 8 weight forward-tapered floating line might be a better choice.

Largemouth bass and fly-rod popping bugs are a southern institution. Manufacturers of bugs are only slightly less numerous than plug manufacturers.

The drill usually consists of a cast close to some sort of shallow water cover, or "structure" in the current bass vernacular. The bug is allowed to rest until the ripples fade, then a soft quiver or two, followed by a long pause, then more vigorous action until the angler discerns the day's bassy whim.

Of all Virginia's bass fishing, Back Bay fly rodding is about as close to a fisherman's Valhalla as an angler can get. During spring and early summer, then again briefly in autumn, Back Bay largemouth avidly take popping bugs. The trick is to keep on casting, particularly around grassy islands and milfoil patches. Back Bay's bass don't average as large as bucketmouths dredged off the bottom of deep inland lakes, but on a fly rod, who cares?

A fly rod, a few good flies, and wham-o, a fine reward.



A pair of waders creates another great opportunity for fly fishing.

Chain pickerel, noted more for their aggressiveness than sagacity, are suckers for streamer flies as well as top-water bugs. A good bet for weed dwelling pickerel in tidal rivers or eastern Virginia lakes is a bright stream fly tied on a "keel" hook. A keel tied streamer has the hook point inverted, like a jig, with the fly dressing protecting the point, making the fly virtually weedless.

Smallmouth bass are very susceptible to fly-rod offerings, particularly in rivers and streams. Popping bugs work well, although smallmouths are fond of a drifting, motionless bug without excessive rod play. Streamers may outproduce top-water offerings on a day-to-day basis. The sculpin-imitating "Muddler Minnow" of western trout fame is a highly effective smallmouth lure. Muddlers in the size 6 to 2 range are my favorite fly offering for bronzebacks.

Nymphs are deadly fly-rod tempters for river and stream smallmouth. A size 6 to 2 "hairy" nymph, particularly a hellgrammite imitation, fished on a slack line drift will fool even the wariest smallmouth.

Along with smallmouth, Virginia's inland rivers host several species of sunfish of importance to the fly-rod fancier. Redbreast sunfish and rock bass are perhaps the most important. Both are avid takers of feathery offerings. These crimson breasted sunfish will take a sponge spider or small popper with alacrity; but they have a special place in their coldblooded hearts for buggy-looking nymphs.

Rock bass take the same lures as redbreast, with perhaps a bit more proclivity for popping bugs. The

Continued on page 35

On The Waterfront

Edited by Jim Kerrick

1976 Boating Accident Statistics

Governor Mills E. Godwin has proclaimed Safe Boating Week as July 3, 1977 to July 9, 1977.

In view of this occasion it is felt that a look at the Virginia Boating Accident Statistics would be in order. The decline in the number of deaths, injuries and amount of property damage reported in 1976 compared to 1975 is gratifying. This indicates that Virginia boaters are becoming more aware of their responsibilities on the waters of this great Commonwealth. No

doubt the home study course on Safe Boating put out by the Virginia Commission of Game and Inland Fisheries, the educational classes sponsored by the U. S. Power Squadrons, U. S. Coast Guard Auxiliary and the American Red Cross have a direct bearing on the reduction in the number of fatalities and injuries.

Courtesy and common sense go hand in hand with Safe Boating.

No. of Accidents Reported	116
No. of Boats involved	139
No. of Persons on Board	381
No. of Fatalities	21
No. of Injuries	59
Property Damage	\$176,708.00

Weather	Type
Clear 112	Grounding 8
Cloudy 18	Capsizing 11
Fog 2	Flooding 4
Rain 4	Sinking 7
Haze 1	Fuel Fire or Explosion 9
Snow 0	Other Fire or Explosion 1

Water Conditions	
Calm 85	Vessel Collision 38
Choppy 38	Fixed Object 14
Rough 7	Floating Object 7
Very rough 5	Fall Overboard 6
Strong Current 2	Fall in boat 7
	Burns 0

Wind Conditions	
None 19	Hit by boat or propeller 7
Light 67	Other 17
Moderate 40	
Strong 6	
Storm 5	

Length	Cause
0 - 15 feet 28	Weather 6
16 - 26 feet 79	Speed 5
27 - 40 feet 23	No lookout 15
40 - 65 feet 4	Overloading 2
Other 1	Improper Load 5
	Hazard 12

Experience	
0 - 20 Hours 8	Other Person 26
20 - 100 Hours 28	Hull Failure 4
100 - 500 Hours 46	Mechanical Failure 2
Over 500 Hours 51	Equipment Failure 13

Visibility	Hull Material
Good 117	Wood 30
Fair 11	Aluminum 14
Poor 8	Steel 0
	Fiberglass 95
	Other 0

Activity	Propulsion
Cruising 68	Outboard 70
Docking 2	Inboard-Outboard 52
Water Skiing 8	Other 11
Racing 2	
Towing 3	
Undertow 1	
Drifting 9	
Anchored 3	
Docked 12	
Fueling 0	
Fishing 5	
Hunting 1	
Skin Diving 0	
Other 13	

Number Engines	
None 26	
One 102	
Two 11	

Boat Type	
Open Motorboat 83	
Cabin Motorboat 26	
Auxiliary Sail 23	
Sail Only 0	
Rowboat 0	
Other 7	

Operators Age	Fire Extinguishers
0 - 10 0	Used 7
11 - 20 13	Not Used 17
21 - 40 71	Not applicable 101
41 - 60 41	
61 - Over 8	

Lifesaving devices on board	Yes 133	No 2
Lifesaving devices available	Yes 136	No 3
Lifesaving devices used	Yes 41	No 82

More accidents occurred in tidal waters.

126 boating accidents were reported in 1975, resulting in 40 fatalities, 61 injuries and 367,963 dollars in property damage.

Growing Up Outdoors

Edited by Gail Hackman

ALMOST TOO LATE

The sun shone brightly as Steve and Brenda raced toward the stream just a short walk from their yard. It had been a wet spring and everything was green and blooming.

"Come on, Brenda," yelled Steve. "Or we'll never get to be Huck Finn and Becky Thatcher."

"Okay, okay," said Brenda, running to catch up.

The two arrived at the banks of the little swift-flowing stream. During the summer the water level was very low and slow moving. But now, due to the snows of the winter and heavy spring rains the water was rushing along with a quick swooshing sound.

"Come on Brenda, let's get out the raft," said Steve excitedly.

The duo had been working on the raft for the last week. They had nailed some scrap wood together and lashed some rubber inner tubes to the sides.

"Okay, Steve," said Brenda jumping up and down in anticipation. Let's get going!"

Steve and Brenda pulled the raft to the edge of the water and jumped on, just as the current started pulling them away from the bank.

"Hey," said Brenda in a shaky voice. "We hardly had a chance to get on this thing before it started moving. Why don't we pole a little closer to the shore."

Steve grabbed the pole and tried to stand on the raft. But the current was moving too swiftly and he was afraid to stand up. When he tried to pole lying down the current quickly grabbed the pole and swirled it away.

"Oh, Steve," said Brenda, "This isn't like Huck Finn at all. We're going too bumpy and too fast. If I don't hold on I'll fall off. I'm scared."

Steve tried to act like nothing was the matter, but his face was pale under his new sunburn.

"Maybe we'd better call for help," chattered Steve through clenched teeth. The cold water was splashing up on the raft and both were soaked. The current swept them along faster and faster. They had almost reached the stretch that ran by Grandpa Hooty's house.

"Help! Grandpa Hooty! Help!" screamed Brenda and Steve, neither one pretending not to be frightened.

Grandpa Hooty was tinkering in the garden outside his house that stood near the stream bank. He heard the frightened shouts of the two youngsters dimly over the splashing water.

"Hold on there, kids! I'm on my way!" the old man called. Grandpa Hooty grabbed a length of rope from the back porch and raced to the banks of the stream as fast as his old legs would carry him. Once there he looped the rope and swung it as far as he could. "Grab the line, boy!"

The rope didn't quite reach the raft. But as the craft bounced nearer, Grandpa Hooty tried again. This time the rope landed on the raft. Steve grabbed it and looped it around one of the pieces of lumber.

"Now, hang on, you two!" Grandpa Hooty screeched. "I'll pull you in.

Just hold on!" The old man heaved and puffed, and finally got the raft to the shore. Brenda and Steve were so happy to be safe that they just sat and sat for a few minutes.

"Now then, Brenda. Now then, Steve," said Grandpa Hooty very seriously. "I've never been so scared as when I saw you two out there in that fast water on that raft that isn't worth a gosh-dern."

The two youngsters looked at the ground in shame. They had never heard Grandpa Hooty be so serious. "We're sorry, Grandpa," said Brenda. "Thank you for helping us."

"Well, I hope you know you were very foolish. You should never enter the water on any craft without wearing a life-preserver vest. And you should never go on fast water, especially on a raft like that. Are you going to remember this lesson forever and ever?"

Brenda and Steve nodded. They had almost hurt themselves and someone they cared for. They were not foolish, and had learned a hard lesson.

"Well, then," said Grandpa Hooty. "Let's go back to the house and have some hot chocolate. You two are enough to give me gray hair," he said, rubbing his bald head.



Art by Michele Moushey

The Red-Winged



Some birds are real skulkers. You cannot get a decent look at them. They slink, they sneak, they hide, merging like ghosts into the merest of cover. Even when they reveal their presence by calling, they persist in staying hidden.

Blackbird

By J. W. TAYLOR

But the male red-wing is quite the opposite. He wants to be seen. Flaunting his crimson and yellow epaulets, he mounts the most conspicuous of perches, and pronounces loudly who and where he is. Wings and tail spread, all feathers fluffed, every bit of him goes into his "song," if such reedy, gurgling ejaculations can merit the term. Sometimes, still fearful that his case has not been stated, he'll take to the air and deliver his proclamations while hovering.

No wonder, then, that the red-wing is one of our best known birds. At least the males are. Once seen, they are unmistakable: no other blackbird has the red and yellow shoulder patches.

Not so well known is the female of the species. She is brown and streaky, sparrow-like in appearance, with scarcely a suggestion of red in the wing. Recognize her by size, shape and the "icterine" form of the bill.

The red-wing is a member of the "Icteridae," along with the orioles, meadowlarks and bobolinks. All have a distinctive profile: the sharply pointed bills have no indication of a notch, and the base runs up into the forehead, forming a gradually merging slope.

The red-wings are but a small part of this family of over 150 species, yet they are among the most abundant of North American birds. Their numbers in some of the winter roosts in the gulf states are truly inestimable, running into the millions of birds. Such roosts result when northern nesting birds migrate south to join the residents there.

When the time comes to return north, it is the males who leave first. They are among the first migrants to reach New England, often arriving while the cattail marshes are still frozen. Each bird stakes out a territory, his own private domain, and awaits the homecoming of the female, which is not until several weeks later.

Red-wings prefer marshy, lowland situations. Such was likely their original habitat, before the country was open to agricultural clearing. Nowadays they seem at home in just about any open, grassy location, so long as there is vegetation sufficient to hold the nest, and enough cover and food.

Throughout Virginia, the red-wing is a common nesting species. There is a higher concentration, perhaps, in the Tidewater counties. With the approach of cold weather, most of them leave the higher, mountainous terrain, but they remain in the eastern portions of the state, where their flocks are augmented by migrants from the north.

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comparatively cavernous mouth of a rock bass bodes ill will for small lures, so I favor size 4 or even larger hooks.

The pugnacious bluegill was quite possibly placed in our inland waters for the sole purpose of attacking sponge rubber spiders and tiny popping bugs. At least that's the most plausible explanation during an early May morning on a Virginia farm pond when the "bull brim" are attending to the rites of spring, and happily attack anything cast within range of their circular spawning beds.

While the bluegill is a dashing roughneck, the crappie is a clumsy scrapper with a glass jaw. The crappie are numerous, often large, and easy to take on sunken flies. If the crappie has a drawback as a fly-rod target, it's the reluctance to feed on top except for a short period at dawn or dusk. Small streamer flies, either white or yellow, retrieved very slowly below the surface are the ticket for the delicious crappie.

Crappies round out the list of fly-rod opportunities in fresh water. These opportunities are all exciting and satisfying, but there's another world for the fly rod in Virginia. Out beyond the first greenery of a salt marsh lies the sea or a place where the sea meets fresh water. There lies the world of saltwater fly fishing.

Saltwater fly fishing is a tough discipline, but it can be the most enchanting of all angling pursuits. In the tributary rivers off Chesapeake Bay, striped bass prowl marshy banks. These are not the paunchy, cold-numb bass dredged up by late season trollers along the Bay Bridge-Tunnel, nor are they the shockingly big striped bass that inhale slab spoons jigged off Smith Mountain Reservoir's bottom. No, these are slim stripers that come slicing from a sandy bottom up three feet to destroy a skipping bug, then turn and tear yards of line from the reel. A big one might scale five-pounds, and that crashing strike is like nothing else in the sea.

Spotted seatrout will occasionally interrupt a surface bug; however, these wonderfully iridescent creatures with yellow fins and two canine teeth will pounce on a slowly retrieved streamer fly such as a 1/0 or 2/0 Honey Blonde, Platinum Blonde, or Lefty's Deceiver.

Bluefish, the incarnation of scaled bloodlust, will ravage both popping bugs and streamers, following up their assault by cobalt leaps that will steal your heart and furious sprints that will often steal your fly along with half your fly line.

Farther out where the green coastal water fades deep blue and the horizon is only a distantly imagined shore, bigger game awaits the fly rodder. Dolphin, amberjack, king mackerel, and bonito are but a few of the possibilities.

The fly rod in Virginia has a niche in every corner of the state, as well as along the bordering world ocean. More importantly, perhaps, the fly rod has a niche in the pleasant memories of many Virginia anglers.

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